

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1 through 113. (Cancelled)

114. (Previously Presented) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

a flange having a hole formed therein and a helical lip that is formed about the hole;

a body coupled to the flange, the body having a pair of generally U-shaped portions, each of which being disposed on an opposite side of the insertion axis, a fastener aperture being formed into an end of each of the generally U-shaped portions opposite the flange, the fastener aperture being adapted to provide clearance for a threaded fastener that is inserted into the hole; and

a wing member coupled to each of the generally U-shaped portions, each wing member having a warped planar shape, the warped planar shape being a twisted plane, the wing member including a first end that is coupled to an associated one of the generally U-shaped portions and a second free end opposite the first end, the second end terminating at a distal edge surface, the distal edge surface being sloped relative to the flange in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in the vertical direction than a second opposite lateral side of the distal edge surface.

115. (Previously Presented) The fastener of Claim 114, wherein a plurality of teeth are formed in the distal edge surface.

116. (Previously Presented) The fastener of Claim 114, wherein the distal edge surface is flat.

117. (Previously Presented) The fastener of Claim 114, wherein the distal edge surface extends in a helical manner between the first and second lateral sides.

118. (Previously Presented) The fastener of Claim 114, wherein an angle between a lateral side of the wing member adjacent the first lateral side and the distal edge surface is about 30° to about 80°.

119. (Previously Presented) The fastener of Claim 118, wherein the angle is about 60°.

120. (Previously Presented) The fastener of Claim 114, wherein the distal edge surfaces are rotated about the insertion axis through an angle of about 5° to about 45° relative to a plane when the fastener is viewed in a top plan view from a direction that is parallel to the insertion axis, the plane including the insertion axis and extending through the fastener such that each of the generally U-shaped portions are on an opposite side of the plane.

121. (Previously Presented) The fastener of Claim 120, wherein the angle is about 30°.

122. (Withdrawn) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

a flange;

a body coupled to the flange, the body having a pair of generally U-shaped portions, each of which being disposed on an opposite side of the insertion axis; and

a wing member coupled to each of the generally U-shaped portions, each wing member having a warped planar shape with a first end that is coupled to an associated one of the generally U-shaped portions and a second free end opposite the first end, the second end terminating at a distal edge surface, the distal edge surface being sloped relative to the flange in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in a vertical direction than a second opposite lateral side of the distal edge surface.

123. (Withdrawn) The fastener of Claim 122, wherein a plurality of teeth are formed in the distal edge surface.

124. (Withdrawn) The fastener of Claim 122, wherein the distal edge surface is flat.

125. (Withdrawn) The fastener of Claim 122, wherein the warped planar shape includes a portion that is twisted.

126. (Withdrawn) The fastener of Claim 125, wherein the distal edge surface extends in a helical manner between the first and second lateral sides.

127. (Withdrawn) The fastener of Claim 122, wherein an angle between a lateral side of the wing member adjacent the first lateral side and the distal edge surface is about 30° to about 80°.

128. (Withdrawn) The fastener of Claim 127, wherein the angle is about 60°.

129. (Withdrawn) The fastener of Claim 122, wherein the distal edge surfaces are rotated about the insertion axis through an angle of about 5° to about 45° relative to a plane when the fastener is viewed in a top plan view from a direction that is parallel to the insertion axis, the plane including the insertion axis and extending through the fastener such that each of the generally U-shaped portions are on an opposite side of the plane.

130. (Withdrawn) The fastener of Claim 129, wherein the angle is about 30°.

131. (Withdrawn) The fastener of Claim 122, wherein a hole is formed in the flange and a helical lip is formed on the flange proximate the hole.

132. (Withdrawn) The fastener of Claim 125, wherein a fastener aperture is formed into an end of each of the generally U-shaped portions opposite the flange, the fastener aperture being adapted to provide clearance for a threaded fastener that is inserted into the hole.

133. (Withdrawn) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

- a flange;

- a body coupled to the flange, the body having a first generally U-shaped portion and a second generally U-shaped portion, the first and second generally U-shaped portions being disposed on opposite sides of the insertion axis; and

- a first wing member and a second wing member coupled to the first generally U-shaped portion, each of the first and second wing members having a warped planar shape with a first end that is coupled to the first generally U-shaped portion and a second free end opposite the first end, the second end terminating at a distal edge surface, the distal edge surface being sloped relative to the flange in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in a vertical direction than a second opposite lateral side of the distal edge surface.

134. (Withdrawn) The fastener of Claim 133, wherein the second lateral sides of the first and second wing members are adjacent one another.

135. (Withdrawn) The fastener of Claim 133, wherein a plurality of teeth are formed in the distal edge surface.

136. (Withdrawn) The fastener of Claim 133, wherein the distal edge surface is flat.

137. (Withdrawn) The fastener of Claim 133, wherein the warped planar shape includes a portion that is twisted.

138. (Withdrawn) The fastener of Claim 137, wherein the distal edge surface extends in a helical manner between the first and second lateral sides.

139. (Withdrawn) The fastener of Claim 133, wherein the first wing member is configured such that a first angle between a lateral side of the first wing member adjacent the first lateral side and the distal edge surface of the first wing member is about 30° to about 80°.

140. (Withdrawn) The fastener of Claim 139, wherein the first angle is about 60°.

141. (Withdrawn) The fastener of Claim 139, wherein the second wing member is configured such that a second angle between a lateral side of the second wing member adjacent the first lateral side and the distal edge surface of the second wing member is about 30° to about 80°.

142. (Withdrawn) The fastener of Claim 141, wherein the second angle is about 60°.

143. (Withdrawn) The fastener of Claim 133, wherein each of the distal edge surfaces is rotated about the insertion axis through an angle of about 5° to about 45° relative to a plane when the fastener is viewed in a top plan view from a direction that is parallel to the insertion axis, the plane including the insertion axis and extending through the fastener such that first and second generally U-shaped portions are on opposite sides of the plane.

144. (Withdrawn) The fastener of Claim 143, wherein the angle is about 30°.

145. (Withdrawn) The fastener of Claim 143, wherein the distal edge surface of the first wing member is rotated in a first direction and the distal edge surface of the second wing member is rotated in a second direction opposite the first direction.

146. (Withdrawn) The fastener of Claim 133, wherein a hole is formed in the flange and a helical lip is formed on the flange proximate the hole.

147. (Withdrawn) The fastener of Claim 146, wherein a fastener aperture is formed into an end of each of the generally U-shaped portions opposite the flange, the fastener aperture being adapted to provide clearance for a threaded fastener that is inserted into the hole.

148. (Withdrawn) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

a flange;

a body coupled to the flange, the body having a first body portion and a second body portion, the first and second body portions being disposed on opposite sides of the insertion axis;

first and second wing members coupled to the first body portion; and

third and fourth wing members coupled to the second body portion;

each of the first, second, third and fourth wing members having a twisted planar shape with a first end that is coupled to an associated one of the first and second body portions and a second free end opposite the first end, the second end terminating at a distal edge surface, the distal edge surface being sloped relative to the flange in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in a vertical direction than a second opposite lateral side of the distal edge surface;

wherein the second lateral sides of the first and second wing members are adjacent one another and the second lateral sides of the third and fourth wing members are adjacent one another.

149. (Withdrawn) The fastener of Claim 148, wherein a plurality of teeth are formed in the distal edge surface.

150. (Withdrawn) The fastener of Claim 148, wherein the distal edge surface is flat.

151. (Withdrawn) The fastener of Claim 148, wherein the distal edge surface extends in a helical manner between the first and second lateral sides.

152. (Withdrawn) The fastener of Claim 148, wherein each of the first, second, third and fourth wing members is configured such that an angle between its lateral side adjacent the first lateral side and its distal edge surface is about 30° to about 80°.

153. (Withdrawn) The fastener of Claim 152, wherein the angle is about 60°.

154. (Withdrawn) The fastener of Claim 148, wherein each of the distal edge surfaces is rotated about the insertion axis through an angle of about 5° to about 45° relative to a plane when the fastener is viewed in a top plan view from a direction that is parallel to the insertion axis, the plane including the insertion axis and extending through the fastener such that first and second body portions are on opposite sides of the plane.

155. (Withdrawn) The fastener of Claim 154, wherein the angle is about 30°.

156. (Withdrawn) The fastener of Claim 154, wherein the distal edge surface of the first wing member is rotated in a first direction and the distal edge surface of the second wing member is rotated in a second direction opposite the first direction.

157. (Withdrawn) The fastener of Claim 156, wherein the distal edge surface of the third wing member is rotated in the second direction and the fourth wing member is rotated in the first direction.

158. (Withdrawn) The fastener of Claim 157, wherein the third wing member is located directly opposite the first wing member and the fourth wing member is located directly opposite the second wing member.

159. (Withdrawn) The fastener of Claim 148, wherein a hole is formed in the flange and a helical lip is formed on the flange proximate the hole.

160. (Withdrawn) The fastener of Claim 159, wherein a fastener aperture is formed into an end of each of the body portions opposite the flange, the fastener aperture being adapted to provide clearance for a threaded fastener that is inserted into the hole.

161. (Withdrawn) The fastener of Claim 148, wherein the first and second body portions are generally U-shaped.

162. (Withdrawn) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

a U-shaped body having a pair of spaced apart legs and a pair of laterally extending flange members, each of the flange members being coupled to an associated one of the legs, the legs being coupled to one another at an end opposite the flange members;

a pair of teeth coupled to the U-shaped body, each tooth extending inwardly away from an associated one of the legs toward the insertion axis and away from the flange members; and

first and second wing members, each of the first and second wing members having a warped planar shape with a first end that is coupled to the U-shaped body and a second free end opposite the first end, the second end terminating at a distal edge surface, the distal edge surface being sloped relative to the flange members in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in a vertical direction than a second opposite lateral side of the distal edge surface.

163. (New) A fastener having an insertion axis, the fastener being configured to be inserted into an aperture in a structure along the insertion axis, the fastener comprising:

a flange portion having a hole that is adapted to receive a threaded fastener to couple the structure to the flange portion;

an insertion portion coupled to the flange portion;

a retaining portion coupled to the insertion portion and having a pair of generally U-shaped portions and first and second wing members that are coupled to at least one of the generally U-shaped portions, each of the generally U-shaped portions being disposed on an opposite side of the insertion axis, each of the first and second wing members having a warped planar shape, the warped planar shape being a twisted plane, the first wing member being twisted in a first direction, the second wing member being twisted in the first direction, each of the first and second wing members being coupled to the at least one of the generally U-shaped portions at a first end and having a second end opposite the first end that terminates at a tip portion, the tip portion of the first wing member and the tip portion of the second wing member being configured to co-engage the structure, the tip portion terminating at a distal edge surface, the distal edge surface being sloped relative to the flange portion in a vertical direction that is generally parallel to the insertion axis so that a first lateral side of the distal edge surface is relatively closer to the flange in the vertical direction than a second opposite lateral side of the distal edge surface.

164. (New) The fastener of Claim 163, wherein the fastener is configured to include an insertion force and a pull-out force, and wherein a ratio of the insertion force to the pull-out force is about 0.04 to about 0.12.